

INTERNATIONAL PATENT COOPERATION TREATY RECORDS DEPT.

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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14 OCT 2004

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NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year)

12.10.2004

Applicant's or agent's file reference
DAW1089

IMPORTANT NOTIFICATION

International application No.
PCT/GB 03/03006

International filing date (day/month/year)
10.07.2003

Priority date (day/month/year)
10.07.2002

Applicant
STG AEROSPACE LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:



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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)



Applicant's or agent's file reference DAW1089	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/03006	International filing date (<i>day/month/year</i>) 10.07.2003	Priority date (<i>day/month/year</i>) 10.07.2002
International Patent Classification (IPC) or both national classification and IPC G05B19/042		
Applicant STG AEROSPACE LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☐ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 10.02.2004	Date of completion of this report 12.10.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Gardella, S Telephone No. +49 89 2399-6997 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/03006

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-30 as published

Claims, Numbers

1-26 filed with telefax on 17.09.2004

Drawings, Sheets

1/4-4/4 as published

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/03006

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 1-26

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1-25 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 26

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/03006

Re Item III: Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Up to now, the following documents have been referred to in the written procedure before the International Preliminary Examining Authority:

- D1: HARMAN R. M.: "Wireless solutions for aircraft condition based maintenance systems" 2002 IEEE AEROSPACE CONFERENCE PROCEEDINGS, vol. 6, 9-16 March 2002, pages 2877-2886, Big Sky, MT, USA, XP010604856
- D2: US 2001/055965 A1 (RENALDI PAT ET AL.) 27 December 2001
- D3: US 2002/044042 A1 (KNUDSEN JESPER ET AL.) 18 April 2002
- D4: US 5,726,644 A (JEDNACZ THOMAS E.) 10 March 1998

In addition thereto, the following document cited in the international search report is referred to in this international preliminary examining report:

- D5: J. HAARTSEN: "BLUETOOTH - The universal radio interface for ad hoc, wireless connectivity" ERICSSON REVIEW, [Online] no. 3, 1998, pages 110-117, XP000783249, retrieved from the Internet [on 2003-10-31]:
<URL:http://www.ericsson.com/about/publications/review/1998_03/14.shtml>

1. Claim 26:

- 1.a Independent apparatus claim 1 relates to a system for a vehicle such as an aircraft, said system comprising a plurality of networked devices which are arranged to communicate wirelessly and which may not be light units.

All the claims of the application as filed for which an international search report was established relate to such a system.

- 1.b Independent method claim 26 relates, however, to a method of operating an emergency lighting system comprising a plurality of networked light units which may communicate through wires, whereby said system may not be suitable for a vehicle such as an aircraft.
- 1.c Hence, the system operated with the method of current claim 26 is not comprised in the subject-matter of the claims of the application as filed for which an international search report was established and, on the contrary, clearly derives from the subject-matter of original claim 36, for which no international search report was established.
- 1.d Therefore, in accordance with Rule 66.1(e) PCT, independent claim 26 will not be the subject of international preliminary examination.

2. Claims 1-25:

Independent apparatus claim 1 and dependent apparatus claims 2-25 do not meet the requirements of Article 6 PCT because the matter for which protection is sought is not clearly defined:

2.a Claim 1 contains an amphibology in that it is not clear whether the feature "comprising a plurality of networked devices" refers to the claimed "system" or to the "vehicle such as an aircraft" which the claimed system is suitable for. If the plurality of networked devices were comprised in the "vehicle", then the claimed "system" would be defined only in terms of an apparatus (i.e. the "vehicle") which is not part of the claimed entity, thereby rendering claim 1 unclear.

2.b The expression "receive/transmit" used in claim 1 is ambiguous and leaves the reader in doubt as to its precise meaning: does it mean "receive *and* transmit", "receive *or* transmit" or still something else? Hence, claim 1 is not clear.

Moreover, it would appear that the applicant has provided support and disclosure for the following case only: "each device is arranged to cycle between an operable condition in which it can receive *and* transmit a signal and an inoperable condition in which it does *neither* receive *nor* transmit a signal". Therefore, the scope of claim 1 appears to be broader than justified by the description and drawings.

2.c The phrase "the devices cycle between the operable and inoperable conditions in a random manner" used in claim 1 is not clear, since it merely provides an indication of the way the devices operate instead of defining the physical features of the devices, which are essential for them to operate in this desired way.

Besides, this functional statement implies that the cycling time of the devices is not fixed; however, this is in contradiction with the additional features of dependent claim 4, which indicate that the cycling time is fixed (i.e. 2.5sec in the armed mode and 10sec in the stand-by mode). Thus, the whole set of claims is unclear.

2.d The description refers to embodiments of the invention which do not fall within the scope of the claims (see for instance: page 6, lines 11-18). This inconsistency between the claims and the description renders the whole set of claims unclear.

Remarks:

3. Besides, it appears that independent apparatus claim 1 does not meet the requirements of Article 6 PCT also for lack of support by the description:
 - 3.a The phrase "signals to and from the master controller are cascaded between the devices in a random manner" used in claim 1 renders said claim unduly broad. As a matter of fact, it is clear from the description that a "random cascading between devices" is achieved by "arranging the devices to *retransmit any signal they receive*" (cf. page 18, lines 28 to page 19, line 11). However, said complementary and explanatory feature is not present in claim 1. Hence, said claim is not supported over its whole breadth.
 - 3.b The scope of claim 1 appears broader than justified by the description and drawings because it includes the case where the devices continuously cycle between the operable and inoperable conditions in a random manner, independently from the ongoing communication, whereas the description and drawings indicate that the devices enter a power saving mode only when they haven't communicated for a long time (cf. figure 4).
4. Furthermore, as a further additional remark, it is pointed out that, the above-mentioned lack of clarity notwithstanding, the subject-matter of claim 1 does not appear to involve an inventive step in the sense of Article 33(3) PCT.
 - 4.a Document D1, which is considered the closest prior art, discloses a system for a vehicle such as an aircraft, said system comprising:
 - (i) a plurality of networked communication devices (i.e. sensors or groups of sensors connected to a local controller; cf. figures 2 and 3)
 - arranged to communicate wirelessly with a master controller (i.e. Master Control Unit or Centralized Processor; cf. figures 2 and 3)
 - using spread spectrum communication (see paragraph 3: "COTS Wireless Technologies")
 - to control operation of the devices and/or to provide information relating to the status of the devices (e.g. control and data signals; figure 3),
 - (ii) wherein each device has
 - its own battery power source (see paragraph 5: "Possible Issues Inherent to Wireless Sensors", section: "Power Constraints").

Said networked communication devices may be Bluetooth-enabled devices. In such as case, by virtue of the Bluetooth standard:

 - (iii) each device is
 - arranged to cycle between an operable condition in which it can receive/transmit a signal and an inoperable condition in which it

does not receive/transmit a signal.

This implicit feature is illustrated in further detail in document **D5** (see in particular the paragraph entitled "Establishing connection" in the section "Networking").

Moreover, as a result of the complexity of the dynamics of a network comprising a plurality of devices (e.g. piconets and scatternets), the unpredictability of external events, the different operation modes foreseen by the Bluetooth standard (namely: active, sniff, hold and park), the mechanism with which a device exits the standby state (which is, at least in part, pseudo-random), on a macroscopic scale

(iv) the devices cycle between the operable and inoperable conditions in a random manner.

- 4.b Therefore, the subject-matter of independent claim **1** differs from this known communications system in that:
- (v) the devices are
- arranged to receive/transmit any signal so that signals to and from the master controller are cascaded between the devices in a random manner.
- 4.c The problem to be solved by the present invention may therefore be regarded as being:
- "to provide a centralized control system with redundant route capability for compensating for unreliability of individual links".
- 4.d The set of features referred to in point **1.c** above is described in document **D4** (see in particular: column **4**, lines **1-3**, and column **10**, line **48** to column **11**, line **20**) as providing the same advantages as in the present application.
- 4.e The skilled person would therefore regard it as a normal design option to include this set of features in the communication system described in document **D1** in order to solve the problem posed, thereby arriving at the subject-matter of independent claim **1**.
- 4.f In this respect, it is worth noting that the set of features referred to in point **1.b** above correspond to a well-know and widely used routing algorithm commonly called "flooding".